



University of Hawaii at Manoa

Environmental Center
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November 7, 1986
RP:0066

Mr. Shinji Soneda, Chief
Environmental Protection and Health Services Division
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Soneda:

Zone of Mixing Application
Hawaiian Electric Company Honolulu Generating Station
Honolulu, Oahu

In response to your request, we have reviewed the application for a renewal of the Zone of Mixing (ZOM) permit for the disposal of Hawaiian Electric's warm water effluent from the Honolulu Generating Station, into Honolulu Harbor. We have been assisted in this review by Frank Sansone and Keith Chave, Oceanography; Stephen Smith, Hawaii Institute of Marine Biology; Hans Jurgen-Krock, Ocean Engineering; and Walington Yee, Environmental Center.

We recognize the essential nature of the warm water discharge and assume that no economically reasonable alternatives exist to eliminate it. Furthermore, if the quantity, quality and temperature of the discharge do not exceed that which has been discharged in the past we would not expect any new areas to be affected beyond those already impacted. As a matter of record, we suggest that the sources of the relatively high values of non-filterable residue, ammonia nitrogen, and arsenic should be identified and noted prior to reissuance of the permit and that the sampling procedure (frequency and number) for measuring these variables be indicated in the permit application. The importance of identifying these sources lies in establishing responsibility should they prove to be a problem in the future. Please note the minor correction needed for salinity units, ie. parts-per-thousand, not parts-per-million.

One area of concern is brought to your attention. There is no indication in the ZOM application as to the content of the "non-hazardous metal cleaning wastes" nor their effects on the receiving waters and biota. If this new discharge increases or affects any of the hazardous trace metals in the effluent, then the effects of the discharge on the water quality and biota of the ZOM should be reevaluated. The levels of arsenic and lead and the addition of "non-hazardous metal cleaning wastes" in the effluent both raise the specter of heavy metal accumulation in the sediments and their possible entry into the food chain of the harbor.

Mr. Shinji Soneda, Chief

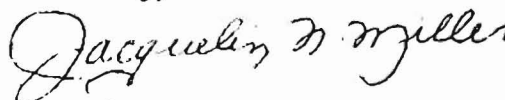
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We believe that the Department of Health may wish to exercise special care in regard to permitting the discharge of heavy metals since they are known to bioaccumulate in the food chain and in particular in the viscera of some fish. Since many local people fish in the harbor and, depending on their ethnicity and culture, may be consuming visceral products in addition to muscle tissue, it is possible that metal concentrations in the sediments may be entering the food chain and pose a hazard to public health. We suggest that the Department of Health assess the sediment metal burden and representative samples of fish and crabs to verify the edible safety of the harbor biota.

We appreciate the opportunity to comment on this application.

Yours truly,

A handwritten signature in cursive script, reading "Jacquelin Miller".

Jacquelin Miller
Acting Associate Director

cc: OEQC
Patrick Takahashi
Keith Chave
Frank Sansone
Stephen Smith
Hans Jurgen-Krock
Walington Yee